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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/635,968	08/10/2000	Dan Botez	032026-0471	6270

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EXAMINER	
JACKSON, CORNELIUS H	
ART UNIT	**PAPER NUMBER**
2828	

DATE MAILED: 02/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/635,968	BOTEZ ET AL.	
	Examiner	Art Unit	
	Cornelius H. Jackson	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *27,28 and 31-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *27,28 and 31-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

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Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05 November 2003 has been entered.

Acknowledgment

2. Acknowledgment is made that applicant's Amendment, filed on 05 November 2003, has been entered. Upon entrance of Amendment, claim 27 has been amended. Claims 27-43 are now pending in the application.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. "[M]eans for blocking current" which includes a layer of insulating material, back biased junctions, or any other structure.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 27, 28, 31, 32, and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Kinoshita (6330265). Kinoshita discloses a surface emitting semiconductor laser **Figs. 1, 2A, 3-7B, 5, 24B, 25B, 26B and 31** comprising a

semiconductor structure including a substrate **1** and an epitaxial structure on the substrate **1**, the epitaxial structure including a layer with an active region **3** at which light emission occurs, an upper **5** and lower **2** cladding layers surrounding the active layer **3**, upper and lower faces, edge faces that terminate the semiconductor structure longitudinally, and electrodes, **see col. 7, lines 10-17,** at the upper and lower faces by which voltage can be applied across the epitaxial structure and the substrate **1**; a distributed feedback grating **10, col. 7, lines 18-52** incorporated with the epitaxial structure extending in a longitudinal comprising periodically alternating grating elements for a selected effective wavelength of light generation from the active region **3**, the grating having a spacing between adjacent grating elements at a position intermediate the edge faces that corresponds to a selected phase shift **11** in the grating **10**, the grating **10** formed and positioned to act upon the light generated in the active region **3** to produce lasing action and emission of light from at least one of the upper and lower faces of the semiconductor laser; and distributed Bragg reflector gratings **20, 21A(-E)** incorporated with the epitaxial structure adjacent the distributed feedback grating **10** to reflect light back to the distributed feedback grating **10** including means for blocking current flow through the Bragg reflector gratings, **see col. 27, line 4-col. 28, line 67**.

In regards to claim 28, Kinoshita discloses the distributed feedback grating is formed of alternating reflective and transmissive elements, **see col. 12, lines 5-32**.

In regards to claim 31, Kinoshita discloses means for confining the current from the electrode to a stripe region, **see col. 11, lines 6-15 or see Figs. 24A-26B and col. 27, line 4-col. 29, line 20**.

In regards to claim 32, Kinoshita discloses all the stated limitations, **see Figs.1, 2A, 3-7B, see col. 7, lines 10-17 and col. 8, lines 3-19**.

In regards to claim 37, Kinoshita discloses the spacing is in the middle of the grating, **see Figs.1, 2A, 3, 5**.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 29, 30, 33-36 and 38-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita (6330265). Kinoshita, as applied to claims 27, 28, 31, 32, and 37 above, teach all the stated limitations except for the reflective grating element being made of gold and/or the transmissive grating element being air. Kinoshita does teach that high reflectivity regions may be formed by using metal films and transmissive regions being a window, **see col. 12, lines 5-29**. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a known material to reflect or transmit part of the laser output, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

In regard to claims 33-36 and 38-43, the materials, **see col. 12, lines 5-12**, wherein the active and cladding layers are made of, are well known in the art in order to obtain a laser of a desired wavelength. It would have been a matter of obvious design choice to select the materials wherein the active and cladding layers are made of based on their suitability for which they are to be used.

Response to Arguments

9. Applicant's arguments filed 05 November 2003 have been fully considered but they are not persuasive.

Applicant argued the following:

a. Kinoshita does not disclose distributed Bragg reflector gratings, but instead teaches distributed Bragg reflectors.

b. The distributed Bragg reflectors of Kinoshita do not meet the definition of distributed Bragg reflector gratings.

c. A claim cannot be anticipated by picking features from different figures and combining them to meet the limitations of a claim may be pertinent to an obviousness rejection.

d. Kinoshita does not meet the requirement of a Bragg reflector grating that current flow therethrough is blocked.

e. Kinoshita fails to teach a spacing in the distributed feedback grating between adjacent grating elements at a position intermediate the ends of the grating.

Examiner replies to Applicants' argument are as follows:

a. Kinoshita does disclose distributed Bragg reflector gratings, since it is inherent that the alternating material which makes up the multi-layer distributed Bragg reflectors forms a grating.

b. The distributed Bragg reflector gratings of Kinoshita does incorporated with the epitaxial structure adjacent the distributed feedback grating to reflect light back to the distributed feedback grating with structure blocking current flow through the Bragg reflector gratings, as can be seen in **Figs. 1, 2a, 3, 5, 16-27**.

c. The claimed invention is anticipated by Kinoshita and the reject shows that various embodiments of Kinoshita reads on the claimed invention. The Examiner has not picked features from different figures and combining them to meet the limitations, but only shows that the features are presented in different figures.

d. Kinoshita does meet the requirement of a Bragg reflector grating that current flow therethrough is blocked, since current does not flow through the top Bragg reflector grating. Also since current does not flow through the top Bragg reflector it does not flow through *both* gratings

e. Kinoshita teaches a spacing in the distributed feedback grating between adjacent grating elements at a position intermediate the ends of the grating, **see Fig. 1, reference number 11**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cornelius H. Jackson whose telephone number is (571)272-1942. The examiner can normally be reached on 8:00 - 5:00, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (571)272-1941. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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